

Claims

What is claimed is:

1. An article comprising:

a flexure assembly of a hard disk drive comprising a metal substrate and a dielectric film attached to said metal substrate, said dielectric film comprising a polymer selected from the group consisting of polyimides, liquid crystal polymers, and polycarbonates, wherein said dielectric film has been etched to a thickness of less than about 20 μm from an original thickness of about 25 μm or greater.

2. An article according to claim 1 wherein the dielectric film is a polyimide having a carboxylic ester structural units in the polymer backbone.

3. An article according to claim 1 wherein the dielectric film is attached to the metal substrate by an adhesive layer.

4. An article according to claim 1 wherein the dielectric film is a liquid crystal polymer attached to the metal substrate without an adhesive layer.

5. An article according to claim 1 wherein the dielectric film has been etched to a thickness of less than about 10 μm .

6. An article according to claim 1 further comprising a patterned conductive layer on the dielectric layer.

7. An article according to claim 1 including at least one unsupported cantilevered lead.

8. A method comprising
providing a metal substrate,

attaching a dielectric film to said metal substrate, said dielectric film comprising a polymer selected from the group consisting of polyimides, liquid crystal polymers, and polycarbonates, said film having a thickness of about 25 μm or greater,
etching said dielectric film to a thickness of less than about 20 μm .

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9. A method according to claim 8 wherein the dielectric film is a polyimide having a carboxylic ester structural unit in the polymer backbone.

10. A method according to claim 8 wherein the dielectric film is attached to the metal
10 substrate by an adhesive layer.

11. A method according to claim 8 wherein the dielectric film is a liquid crystal polymer attached to the metal substrate without an adhesive layer.

15 12. A method according to claim 10 wherein the dielectric film has been etched to a thickness of less than about 10 μm .

13. A method according to claim 8 wherein the dielectric film is etched with an aqueous solution comprising

20 about 30wt.% to about 55wt.% of an alkali metal salt; and
about 10wt.% to about 35wt.% of a solubilizer dissolved in said solution.

14. A process according to claim 8 wherein said alkali metal salt is selected from the group consisting of sodium hydroxide and potassium hydroxide.

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15. A process according to claim 8 wherein said solubilizer is an amine.

16. A process according to claim 8 wherein said solubilizer is ethanolamine.

17. A method according to claim 8 wherein the etching is carried out at a temperature of about 50°C to about 120°C.